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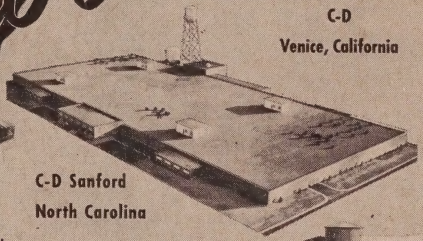

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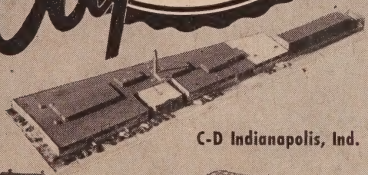

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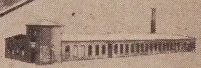

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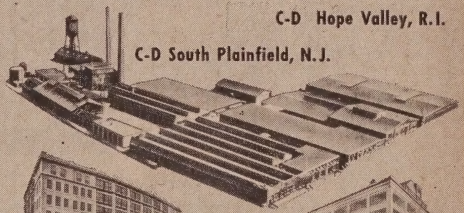

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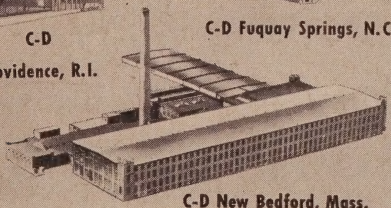

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TRANSISTORIZED INTERCOM

Pushpull class-B output-stage operation permits useful amounts of audio power to be obtained from conventional transistors. One loudspeaker-type application that comes quickly to mind is the small-sized intercommunicator unit.

A transistorized intercom has several advantages: Its small size, light weight, and operation from a small, self-contained battery suit it to field applications remote from power lines. It may be used as a "baby sitter" with complete confidence and safety, since there is no electric shock hazard should the instrument fall into the crib or in any other manner come into contact with the baby's body. Nor is there danger from burns, common to hot tubes and transformers.

The transistorized intercom described in this article is built around a 3-stage amplifier. While we have not worked for miniaturization in this model, it will be apparent to the reader that the intercom might be made much smaller, even to the extent of being housed in a small speaker box. Figures 1, 2, and 3 show various aspects of the instrument.

Intercom Circuit

Figure 4 shows the complete circuit of the intercom. Note that low-power transistors are used in each position.

Transformer coupling is employed throughout, to insure highest over-all power gain with a given number of transistors. NPN-type transistors (Sylvania 2N35) are used in each

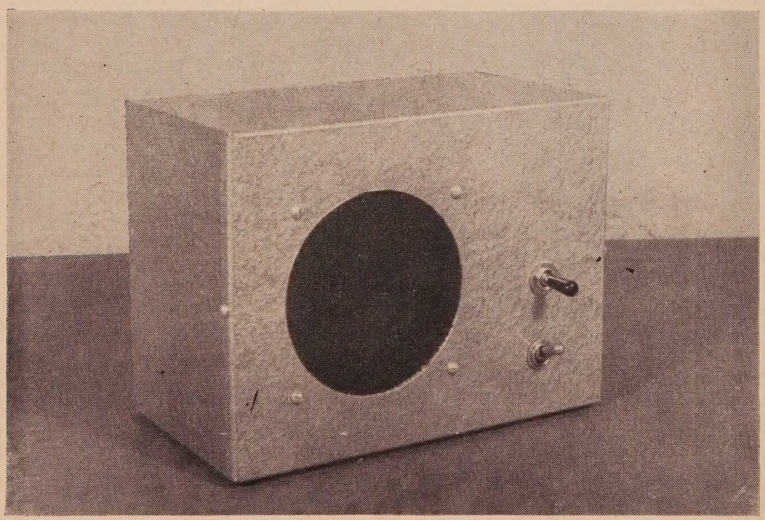

Fig. 1. The Completed, Transistorized Intercom. Entirely self-contained, this unit is built into an 8" x 6" x 4½" aluminum chassis box.

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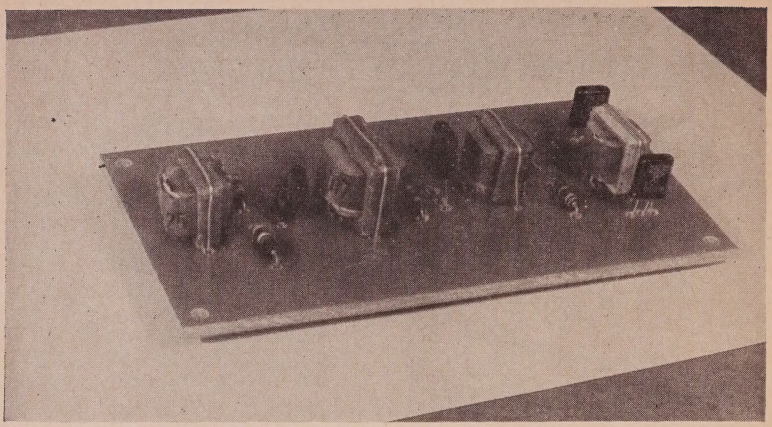

Fig. 2. Transistorized, High-Gain, High-Output Amplifier. This amplifier, built on a 6" x 3" bakelite subpanel, is the heart of the intercom. All components except coupling capacitors and switches are visible on the top of the subpanel.

stage. Two cascaded, high-gain "front-end" stages are employed. The second of these is the driver for the pushpull class-B output stage. Isolating capacitors, C_1 and C_2, in the first two stages break the d-c path between the transistor bases and transformer secondaries to permit d-c biasing of the bases through resistors R_1 and R_3. Bias for the output stage is obtained from the voltage divider, R_4R_5. Emitter resistor R_2 provides negative feedback in the input stage. This lowers distortion and boosts the input impedance of this stage.

The transformers all are miniatures. Transformer connections must be made exactly as shown in Figure 4, according to the manufacturer's color coding. If the connections are swapped, audio ocsillation will result in a sustained howl.

Figure 2 shows how the amplifier components are mounted on a 3/16"-thick bakelite panel 6 inches long and 3 inches wide. This panel later is mounted on the floor of the intercom box, as shown in Figure 3. Small holes drilled in the mounting panel pass the pigtails of resistors, transistors, and transformers through to the under side where they are connected to complete the circuit. Capacitors C_1 and C_2 are mounted under the panel and are not visible in Figure 2. The TALK-LISTEN switch (S_1) and ON-OFF switch (S_2) are mounted on the front panel (See Figures 1 and 3).

Operation of the circuit is simple. A 4-inch dynamic speaker serves as microphone when switch S_1 is in its lower (TALK) position or as a speaker when S_1 is in its normal upper (LISTEN) position. The TALK-LISTEN switch is of the spring-return type and is depressed to the TALK position. Each remote station consists simply of a similar speaker and switch (S_3). Thus, at "rest" each speaker (station) normally **listens.**

When S_1 is depressed, the master speaker is connected as a microphone to the input of the amplifier through transformer T_1. The remote speaker, however, is connected to the amplifier output, through transformer T_4, by re-

mote switch S_3 in its normal (LISTEN) position. Talking into the master speaker thus gives communication with the remote station. The opposite action is obtained with remote switch S_3 depressed to its lower (TALK) position. The remote speaker then becomes the microphone, being connected to the amplifier input through transformer T_1; and the local (master) speaker becomes the reproducer, being connected to the amplifier output through S_1 in its LISTEN position. The remote station then talks to the master station.

The remote station is connected to the master station by means of a 3-conductor cable. Any number of similar remote stations, each consisting simply of a speaker (SPKR) and switch (S_3), may be operated. Each cable would be connected to output terminals 1, 2, and 3, as shown in Figure 4 for the single remote station.

The amplifier gives an output of 125 milliwatts on normal-level speech delivered at a distance of approximately 1 foot from the speaker-microphone. This output may be boosted for noisy locations by raising the power supply to 12 volts. Cries and other sounds across a room are picked up and reproduced surprisingly well when the source is in front of the microphone.

In the original model, we felt no need for a gain control. One may be added very easily, however, simply by connecting a 15,000-ohm potentiometer across the secondary of transformer T_2. The wiper of this gain control potentiometer must be connected to capacitor C_2.

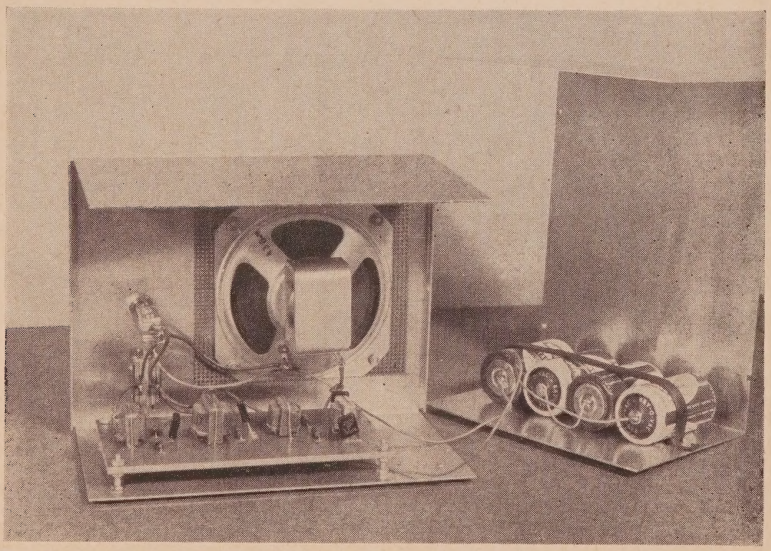

Fig. 3. Completely Assembled Intercom. The amplifier (Figure 2) is screw-mounted to the floor of the box. The ON-OFF switch and PUSH-TO-TALK switch are on the front panel (seen here to the left above the amplifier subpanel). In this photo, the 3-wire cable has not yet been connected.

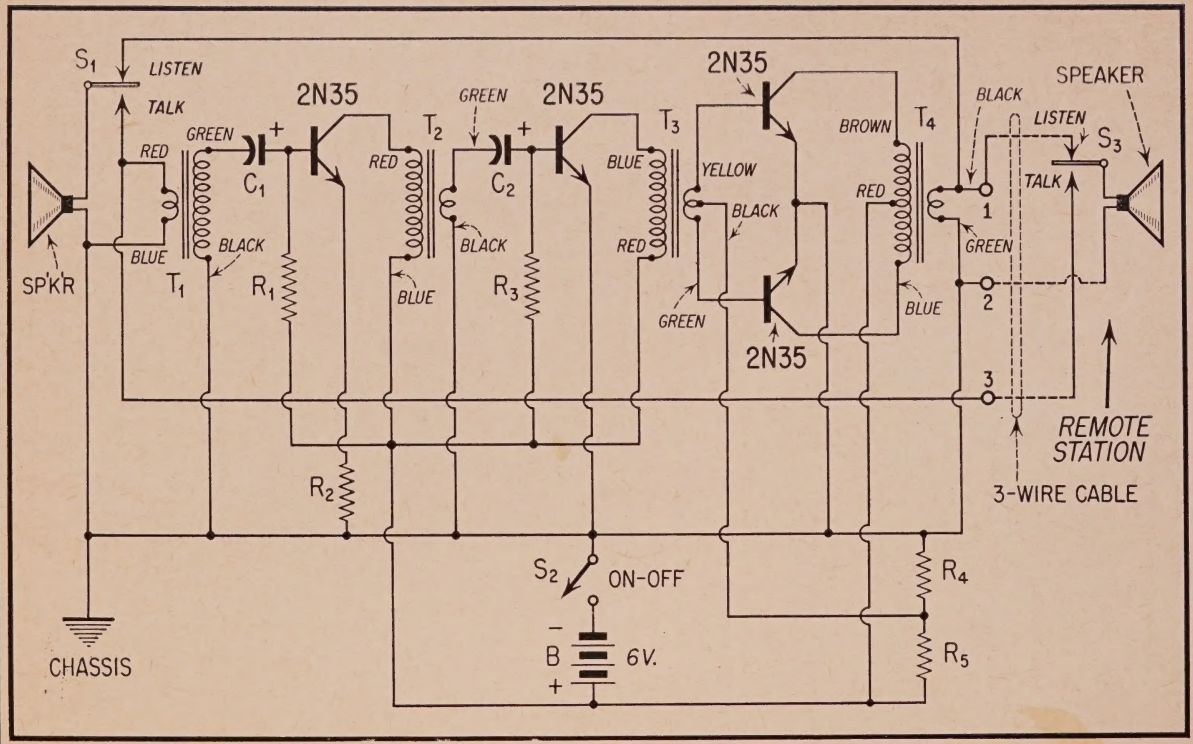

Fig. 4. Complete Circuit of Transistorized Intercom.

D-C power is supplied by the 6-volt battery, B, consisting of four 1½-volt Size-D flashlight cells connected in series. The class-B output stage and low-drain intermediate stages make the most economical use of the power supply and insure long battery life.

Mechanical and Electrical Construction

Figures 1, 2, and 3 show constructional details of the intercom.

The instrument is built into an aluminum chassis box (LMB No. 146) 8" long, 6" high, and 4½" deep. The speaker, TALK-LISTEN switch S_1, and ON-OFF switch S_2 are mounted on the front panel (See Figures 1 and 3). The amplifier subpanel (Figure 2), already described in the preceding section, is mounted on the floor of the case, as shown in Figure 2, by means of four 6-32 screws which support the panel high enough to clear the wiring and coupling capacitors.

The four battery cells are mounted on the inside of one of the side walls. See Figure 3. A strap made from antenna ribbon holds these cells in place.

The speaker is mounted behind a 4½-inch-square panel of perforated grille sheet. Mounted slightly off center on the front panel, the speaker offers no obstruction to the amplifier components.

The TALK-LISTEN switch, S_1, is a Switchcraft No. 3033 component. The reader must bend the upper contact spring of this switch down slightly so as to make contact with the movable blade in the latter's spring-returned normal (LISTEN) position.

No special precautions are necessary in wiring the intercom. The connections themselves have been simplified by the subpanel-type construction of the amplifier which allows almost complete wiring of the instrument by interconnecting the pigtails of components. Readers with the urge might make an etched circuit project of the amplifier.

Installation Notes

The intercom has been tested up to 600 feet and there is no reason why it should not operate reliably over much longer distances. In long-wire installations, there will be some advantage to shielding the 3-conductor cable and grounding the cable to the chassis and earth at one end.

When the cable is run for a considerable distance out of doors (50 feet or more, in fact), a 2½-millihenry r-f choke should be connected in series with Lead 3 to suppress the effect of r-f pickup from local broadcast stations. It may be necessary also in stubborn cases to bypass output terminal 3 to chassis and ground through a 0.002-ufd mica capacitor.

PARTS LIST FOR FIGURE 4

B—6-volt dry battery (Four 1½-volt Size-D flashlight cells)

C_1, C_2—2 ufd 10-volt Tantalum Electrolytic Miniature Capacitors — C-D TAN 58A

R_1—0.75 megohm ½ watt carbon

R_2—250 ohms ½ watt carbon

R_3—0.27 megohm ½ watt carbon

R_4—120 ohms ½ watt carbon

R_5—4.7K ½ watt carbon

S_1—Spdt, spring-return switch — Switchcraft 3033

S_2—Spst toggle switch

S_3—Same as S_1

SPKR—4-inch, 3.2-ohm dynamic speaker

T_1—Miniature transistor input transformer (3-ohm primary, 4000-ohm secondary) — Argonne AR-125

T_2—Miniature transistor interstage transformer — Argonne AR-107

T_3—Miniature transistor class-B driver transformer — Argonne AR-109

T_4—Miniature transistor class-B output transformer — Argonne AR-119

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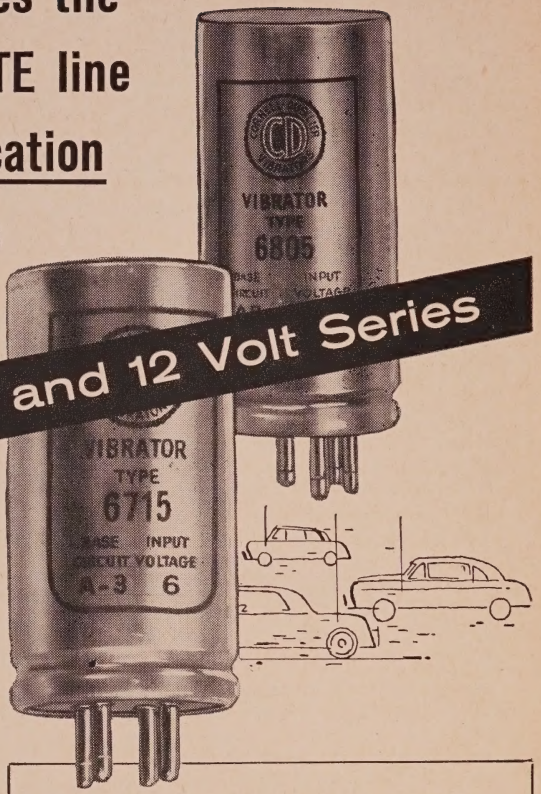

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5722	6722
5725	6725
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5821	6821
5822	6822
5824	6824

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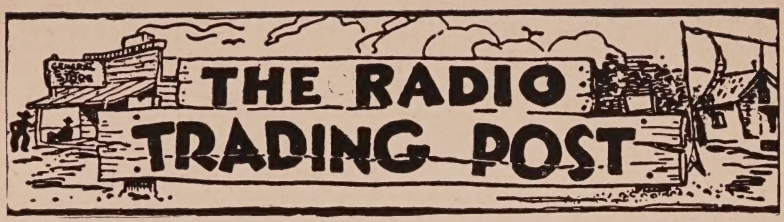

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WANTED — Radio and TV servicing equip. and books for cash. State condition and price. Frank M. Sabin, 4226 Decatur St., Philadelphia 36, Pa.

WANTED — FCC approved frequency and FM modulation measurement gear; good camera. Have Brush BK-411 tape recorder in like new cond. to swap. Harvey Van Erem, Route 1, Box 92, Jamestown, N. D.

FOR SALE — Two 32-400 volt, 150 ma. Carter 415C genemotors, 7,000 rpm, complete with audio and radio filters, filament and H.T. terminal boards, cable and Jones socket. J. H. Brownell, Pointe du Bois, Manitoba, Canada.

FOR SALE — SX-71, $135; HRO-5TA1, 4 coils, spkr., pwr supply, 1. n., $145; 32V-3, $450; 75A-1, $235; NC-88, $79. Want ART-13, ARC-1, ARN-7, teletype. Tom Howard, 46 Mt. Vernon St., Boston 8, Mass.

WANTED — T-19C38 Thordarson choke 5-20 hy., 500 ma.; T-19C45 Thordarson choke 12 hy., 500 ma. F. W. Jones, Gabbs, Nev.

SELL OR TRADE — 6AS7G and 7N7 tubes; Zenith UHF strips for channel 27-53-45 for G1-G2 and H series tuners. Write for complete part number. Smith Radio & TV Service, Mtd. Rt. 15, Darlington Rd., Beaver Falls, Pa.

FOR SALE — Heathkit 5" oscilloscope model 0-5, wired and operating, $35; Morris coil winder, $3.50; Army surplus oscilloscope TS-34/AP 247 CW, no tubes, $5. F. E. Kirtlan, 560 Pala Way, Sacramento 19, Calif.

FOR SALE — RCA MI-12525 magnetic wire recorder, complete with MI-12011 mike, MI-12878 forward & reverse foot switch, 2 wire reel cartridges, like new, best offer. John A. Warkentin, Mountain Lake, Minn.

FOR SALE — Webster wire recorder, $30; complete B&J 4x5 press camera, $50; Rek-O-Cut 16" 2-speed (78-33) turntable with recording head, $175, COD. Send 50%. Expert Television, 995 Ogden Ave., New York 52, N. Y.

SELL OR SWAP — Electronic equip., ham items, power supply, Jensen electro dynamic speaker; Sampson PAM amplifier; set tubes for RCA 104 speaker. Want 16 mm films, all types or what? R. N. Eubank, 1227 Windsor Ave., Richmond 27, Va.

FOR SALE — Instructograph code teacher, complete with earphones, key and 10 rolls tape in exc. cond., $27.50. Robert Stuckert, Box 103, Fresno, Calif.

WANTED — FM rcvr 152-162 mobile or 115 v.; tape or disc recorder; telephone answering recording unit; gasoline AC generator; movie proj.; Geiger counter. Cash waiting. S. Krzak, 65 Main St., Pawtucket, R. I.

WANTED — NC-101XA receiver. State price and condition. Donald Cameron, 1619 Milburn Ave., Toledo, Ohio.

WANTED — Correspondence or home study radio and TV course, $10 or offer; National 57 receiver in good cond.; any information for beginning ham with little background. Ralph W. Symons, 604 E. Green St., Champaign, Ill.

FOR SALE — Model CRG 46175 Navy rec., range 80-3500 kc, with plug-in loop type CRG 69079 and 6 v. 3 a. input, 150 v. at 30 ma. output, dynamotor type CRG 21842. Best offer. Nick Medore, 549 Farnsworth Ave., Clairton, Pa.

FOR SALE — Sylvan crystal controlled 2-meter converter, like new, $17.50 postpaid. Harry Williams, Pleasant Hill, Mo.

FOR SALE — Eico 1040 battery eliminator and Oak Ridge CRT tester, model 106, $12.50 each and like new. J. Keithley, 18 Alton St., Aberdeen, Md.

FOR SALE — Burgess N7200 VOM, 14 ranges, $12.50; like new 20 w. amp. kit, complete except spkr, $15; AC power xformer 3 w. amp kit, $6.50. A. Agostino, 223 So. Winebiddle Ave., Pittsburgh 24, Pa.

SELL OR TRADE — Hallicrafters S-38-C receiver, $30; Masco Midgetalk 2-station intercom, l. n., $26, or will swap for test equip. M. E. Hall, 8900 Webster Rd., Berea, Ohio.

FOR SALE — Simpson 480 genescope, perf. cond., with all probes, $275. R. E. Mesaros, 1139 E. Colfax Ave., South Bend, Ind.

FOR SALE — Make offer: Riders manuals 1 to 6; Ghirardi's Radio Troubleshooters Handbook; Television Servicing by Bucksbaum, others, like new. Also two 7JP4 pix tubes, perf. cond. Robert M. Davis, 3802 Coolidge Ave., Baltimore 29, Md.

SWAP — Eico Instruments: 425 scope; 950A R-C bridge; 360 sweep gen.; 320 signal generator; 1-5 multi-signal tracer, l. n., for 3¼ x 4¼ or 4 x 5 Crown Graphic. R. W. Sloat, 1008 5th St., Moundsville, W. Va.

FOR SALE — Service shop equipment, Hickok, Riders TV manuals ,tubes, parts, few TV sets. Charles E. Spitz, 1420 So. Randolph St., Arlington 4, Va.

SELL OR TRADE — Weston 772 VOM. Need telephoto lens for Argus C-3 camera, or make cash offer. Mitchel Katz, 147-11 76th Ave., Flushing 67, N. Y.

WANTED — Secondhand, unmarked copy of Television Video Handbook by Scheraga-Roche, in good condition. Irwin Gray, 66-28 Saunders St., Forest Hills 74, N. Y.

FOR SALE — Radio Craftsman AM-FM tuner, model RC1, needs glass dial plate, otherwise OK, $55. Charles A. Schmitz, 4737 Matilda Ave., Bronx 70, N. Y.

WANTED — Instruction book for Solar Exammeter, model CF. Will buy or borrow. Gaines M. Crook, R. 1, Box 53, Williston, S. C.

FOR SALE — Hallicrafter S40B, like new, $60 FOB; Monitor Police radio FMC 1LC, $90 FOB. Best offer. W. H. Weiss, 1009 East Riverside Ave., Merrill, Wis.

FOR SALE — 25 ft. RG-8/U, $2.50; 50 ft. RG-11/U, $5.50; Heath AC-1, $14.50; 6L6s; 866As; 814s. B. H. Mathew, 25 Grove St., Minneapolis 1, Minn.

FOR SALE — Used Mallory vibrapack, VP 554, 6 v. input, 300 v. 100 ma. output, $6.50 plus postage; dynamotor, 5.6 v. input, 425 v. 375 ma. output, $12 plus post. Stanley Ackerman, 57-47 Marathon Pkwy., Little Neck 62, N. Y.

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FOR SALE — EMC VTVM, model 300K, complete with HF probe and HV probe to 30 kv., $24; Roller-Smith 3" round type TD milliammeter, 0-5 DC-MA, black face, white numbers, $3. Both in good cond. Carl C. Seidler, 2854 West 29th St., Brooklyn 24, N. Y.

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WANTED — Good used test equip. used for radio and TV. Will pay fair price for kit manuals on NRI television course. Brian Bailey, Gen. Del., Cisco, Tex.

FOR SALE — Used professional type Concertone 20-20 tape recorder, mounted in 19" relay rack, $320 FOB. Prefer local. Bill Pendleton, 26 Ledgelawn Ave., Lexington 73, Mass.

FOR SALE — Going out of service business account of health, will sell nearly $700 retail value in new tubes; 167B RCA, test oscillator and other equip. Capp Electronics, Camp Hill, Mounted Rt., Pa.

SELL OR SWAP — Westinghouse AC volt-meter, type PY-4; Weston sight-light meter, model 703, type 3, all A-1 cond. Want Precision E-200C sig. gen. W. Massaro, 1555 Odell St., Bronx 62, N. Y.

WANTED — Antique ham gear, E. I. Co., Duck, Kennedy type 110 rcvr; National type XR-14, XR-10A coils for 80 and 40 meters, complete with PB 15/16 plugs. Gene Harrison, 2410 Salerno Dr., Dallas, Tex.

SELL OR SWAP — Knight VTVM, UHF converter, etc., for test equip. Bruno De Cola, 379 S. Broadway, Salem, Ohio.

SELL OR TRADE — Professional disc recording equip., Rekokut, Allied Pro, etc.; complete system or separate items. Want Magnecord or Crown tape recorder, 5" scope, FM tuner, or ?? Send stamp for details. John T. Moore, Box 63, Seneca, S. C.

WANTED — Johnson rotory inductor in trade for new 100TH tube. Also one 250TH for sale. Vernon L. Hoskinson, RFD 2, Prescott, Iowa.

SELL OR TRADE — Bruning-Wallace aircraft protractor MK. 3-B; Philco 61-C window model air conditioner, A-1 cond.; APT-2 radar jammer xmitter; two automatic alarm systems. Consider comm. or early wireless receivers and lab equip. D. R. Canady, 931 So. Court St., R. 1, Medina, Ohio.

WANTED — Supreme diagram books — Radio 1949, '51-'54 and TV, all; record changer, audio and manufacturers manuals on radio and TV. Sell or trade Hickok 640 scope and 175 voltage calibrator; Leece-Neville 100 amp., 6 v., alternator. Bob Franks, 29 Gould Ave., Bedford, Ohio.

SELL — Complete 1952 ICS electronics course (no equip.), 39 booklets: math thru trig., logarithms, electrical principles, machinery, measurements, batteries, illumination, vacuum tubes, CRTs, amplifiers, oscillators, detectors, $28. J. Ryscuck, 3633 Kentucky Ave., Norfolk 2, Va.

FOR SALE — Oscilloscope, sig. gen., VOM, capacitor checker, sweep gen., signal tracer. Cash, no trades. Ace TV, 5341 Cordelia Ave., Baltimore 15, Md.

SELL OR TRADE — Radio and electronic books, manuals, magazines, Sams Photofacts, Supreme manuals. Can use record players or TV set. Jack Grant, Box 281, Coalgate, Okla.

TRADE — Hickok 305A scope; Williamson type amplifier; 6L6s; RCA 45 changer; Turner 22X and RCA Aero-Pressure mikes; Heath 5" scope; Eico VTVM. Interested tape recorder. Denaro's TV, 169-10 140 Ave., Jamaica 34, N. Y.

SELL OR TRADE — Two 36" high cabinet racks for 19" panels, $12.50 each; two Garrard 78 rpm changers and crystal cartridges, $5 each. Interested standard typewriter or Heathkit WA-P2 and/or W-4M. Won't ship. G. B. Crofts, 35 Bryant Dr., Livingston, N. J.

FOR SALE — Complete Heath AT-1 phone-CW xmitter, modulator (self-contained power supply), 6SJ7 - 6C5 - PP6L6S - AB1, Ameco low-pass filter, $40. Also have xmitting conds., meters, power xformers, tubes, etc. Metropolitan area. Capital Radio, 322 Grand St., Paterson, N. J.

FOR SALE — Par metal rack and cabinet, 42" x 22" x 17" with door, good cond., $19; FM tuner, Pilot T601, exc. cond., $19; Heath sine and square wave gen., exc. cond., $20. Joseph F. Dineen, 9 Winter Terr., Westwood, Mass.

WANTED — A-1 TV repair man to go into partnership with man in business since 1942. Prefer one living in Brooklyn, need not be full time. Allied Electronic Co., 960 E. 12th St., Brooklyn, N. Y.

FOR SALE — BC-906 freq. meter, 140 to 230 mc., exc. cond., $20; Carter dynamotor 5.5 v. input, 350 v. DC @ 150 ma. output, filter, starter relay, $30; Hallicrafters Sky Buddy rcvr, $25. Walter L. Babcock, 405 Sayles St., Oneida, N. Y.

WANTED — Instructograph code machine, complete with all rolls, 110 v. AC operation. State price and cond. Joseph J. Ryan, 242 Clinton Ave., Albany 10, N. Y.

SELL OR TRADE — Sprague Kwik-Test KT1 cap. checker, $20; Heath sig. tracer T3, $20, A-1 cond. Will trade for CREI course. Austin Wright, Norwich, Kan.

WANTED — Gonset converter 3 to 30 meg. Will pay cash or swap. C. F. Albertoni, 2629 Paxton Ave., Akron, 12, Ohio.

SELL OR TRADE — Like new ham gear, chassis, meters, Triplett 666R VOM, tubes, etc. Want twin reflex camera, printing-developing-enlarging. Stamp for list. R. A. Williams, 16153 3 Palms St., Puente, Calif.

SELL OR SWAP — Weston 772 VOM and Sonar XE-10 FM exciter. Make offer. M. Katz, 147-11 76th Ave., Flushing 67, N. Y.

WANTED — BC-221 complete. Will trade A1 Jap rifle, meters, NC-100 rcvr, BC-458A, CBY46129, some cash. F. A. Nichols, 720 East Eldorado, Appleton, Wis.

FOR SALE — BC-221-T with AC power supply, $75; PP 812 amplifier with 500 w. Johnson coils with 200 w. power supply and antenna coupler, $40; Elmac 4-250-A, $35. M. Molyneux, 214 East 19th St., Anniston, Ala.

FOR SALE — Garrard RC80 changer, 60 cy., 45 rpm. Best offer or trade above $40. Need 12WP4 tubes. Theodore F. Sassi, 190 Warwick Neck Ave., Warwick, R. I.

WANTED — By newly-formed Ham club: inoperative or obsolete test equipment you would donate rather than junk. Will pick up 100 mile radius. NBS Radio Club, c/o Coyle, 5107 Wissioming Rd., Washington 16, D. C.

SWAP — Eico model 214 VTVM with RF probe, both almost new, for Precision model 251A signal tracer with plug-in test probes. Ray Arendt, 207 East Amherst St., Buffalo 14, N. Y.

FOR SALE — Stancor trans. PM8412, $5; PM8406, $2.50. Boxed and guaranteed, FOB. Emil Backstrom, Jr., 6 Pel Place, Pelham, N. Y.

WANTED — Bliley xtal controlled oscillator, model 1-A, B or C. Must be clean, with all xtals and manual. A. H. Glines, 36 Winter St., Quincy 69, Mass.

TRADE — Like new 7050A Philco tube tester, for 16X50 or 20X50 binoculars. Vick Radio & TV Service, Kershaw, S. C.

SELL OR TRADE — Tubes: 2A3; 3LF4; 3Q4; 5Z3; 6 - AF6, BD5, BF5, C4, E5, H6, etc. Send for list. J. Andrews, 740 Maple St., Bethlehem, Pa.

SELL OR TRADE — Edwards FM tuner, dynameter, dynamic mike. Need 5" scope, square wave osc., disc recorder, 45 player, tubes. Charles B. Cerates, Rt. 1, Box 1098, Auburn, Calif.

WANTED — Panadapter: MB-40SL National coil unit; B&W TVH coils and mounting, shielded 2-turn link; Bud 1633A. Have antique camera collection to sell. M. J. Douglas, 1401 Amador, Concord, Calif.

SELL OR SWAP — 630TS, 21", for Hallicrafter SX73 or HRO 60. Warren G. Fisher, 415 SW 11 St., Miami 36, Fla.

SELL OR TRADE — Two BC-375-E xmitters complete, like new; BC-348-Q, 24 v., and photo equip. Want BC-441 or BC-669 transceiver; APN-1 altimeter, test equip. William Hansen, 165 Silverbrook, Niles, Mich.

SELL OR TRADE — Nikon lens, 135 mm, 28 mm, varifocal, electronic flash unit, slightly used. Want good ham rcvr. Norman LaCroix, 392 Benefit St., Pawtucket, R. I.

FOR SALE — BC-348-R with AC power supply all in one unit, added audio stage for speaker operation, phasing and separate RF and audio controls, $65 FOB. Also SX24 in A-1 cond., $75. M. Goodman, 2621 Burns Pl., Union, N. J.

FOR SALE — Unused Hytron 16RP4, $20, matching Dumont cosine yoke Y2A1, $5. Phillips, 21 Cloverdale St., Florence, Mass.

FOR SALE — Heathkit AT-1 radio xmitter, band switching, 80-10 meters, with novice band crystals, checks 100% on all bands, $25. Interested in amateur telescope making. Robert Retke, Hemingford, Neb.

TRADE — 120 bass piano accordion, 4 switches, brown gladstone red plush lined case. Watn 60 to 75 w. amplifier, three drivers and mike with cable, complete. John Arnold P. O. Box 84, Bluffs 3, Ill.

FOR SALE — Sams Vols. 2 and 5; drafting set; tuner; radio and TV tubes; 813. Irving Koplow, 530 Riverdale Avenue, Yonkers, N. Y.

SELL — Eico flyback 944, $24; battery eliminator 1050, $30; CR tube checker 630, $18; Supreme tube checker 589A, $30; Heathkit 08 scope, $35. E. A. Hudson, Mt. Rt. 7, Ellwood City, Pa.

WANTED — Surplus receiver, BC-1004. State price and cond. Will pay cash or have DB-20 preselector, and 12-tube console in A-1 cond. Richard Daneker, 316 E. 2nd St., Lansdale, Pa.

WANTED — Riders TV manual 13. State price and cond. Lloyd Kaun, 733 Chapala St., Santa Barbara, Calif.

FOR SALE — Thirty coin-operated radios, good cond., $29.95 ea.; QST 1932-'34, 1938-'53; IRE 1945-'53. R. J. Evans, 525 Highland Ave., East Lansing, Mich.

WANTED — B&K deluxe CRT400; Riders Vols. 20, 21; RCA color course. Clifford D. Lessig, Riegel Ridge Rd., R. 1, Milford, N. J.

WANTED — Oak Ridge sig. gen., model 103. William Sharkey, 48-50-40 St., Long Island City 4, N. Y.

SWAP — Contract termination electronics parts, tubes, test equip., for late model office equip. Need Marchant calculator, adding machines, typewriters, check writers, or Encyclopedia Britannica. Frank Dane, 4254 Niagara Ave., San Diego 7, Calif.

SELL OR TRADE — Precise 610 sig. gen., $23; Sprague checker KT-1, $18; Eico sweep gen., factory wired, $23, or trade for SX24, 28, 42, 43, or HQ-129X rcvr. R. Vasieck, 1331 Genesee, Cleveland 24, Ohio.

FOR SALE — Aluminum panels, undrilled, unpainted. Ken Palmer, R. 2, North Collins, N. Y.

WANTED — Schematic of Scott radio, model AFM philharmonic FM 33-tube chassis, by E. H. Scott Radio Labs. State price. Joe Latham, 640 East Princeton, Ontario, Calif.

SWAP — Lietz medical microscope and case. Want good oscilloscope such as Dumont, RCA, or Sylvania, or good geiger counter. George Stant, Box 203, R. 4, Freehold, N. J.

FOR SALE — ARC-5 xmtr, 100 w. converted 7.-9.1 mc., with 500 v. power supply, $25. Good condition. Will sell separate. Bob Pohorence, 36 Orchard St., Yonkers, N. Y.

FOR SALE — RME-45A comm. rcvr with spkr, excellent cond., $89. J. Phennicie, Jr., Box 55, Norway, Iowa.

WANTED — Transformers: 117 v. primary, 12 to 28 v. output, half ampere to 5 amp., UL, used or new, state price. R. N. Eubank, 1227 Windsor Ave., Richmond 27, Va.

FOR SALE — UHF standard coil strips: 19-F, K, Q, R; 25-F, K, R, $3 each plus postage. Also have hundreds of hard-to-get obsolete radio tubes, write for type and prices. A. W. Kline TV, 914 No. Dewey, Oklahoma City 3, Okla.

WANTED — FM rcvr, mobile or AC, 30 to 50 mc., prefer single freq., crystal controlled, any cond. John Pantalemon, 55 E. Central Ave., Pearl River, N. Y.

SELL OR TRADE — Westinghouse xmtr, CAY 52239 Hi freq. unit of Navy TBW-3. Want cash or 25 hp. outboard motor or 14 ft. boat. Columbia, 2432 So. 24, Omaha, Neb.

WANTED — Geiger counter or scintillator for cash and/or swap cornet and U. S. School of Music Cornet course, value about $80. Herbert Hoch, 418 E. 53rd St., Brooklyn 3, N. Y.

WANTED — Used metal locator to locate small objects up to size of a penny; also schematic practical for building a Geiger counter, with transistors, and geiger tube 1B86. Benty Johnson, 368 Dawes St., Stockton, Calif.

SELL OR SWAP — Simpson 260, good cond., $22; auto radio for 1942 Buick, make offer; 1/4" electric drill, $10. Need tube checker. Hy Levine, Box 904, Liberty, N. Y.

FOR SALE — RCA AVT-112 transmitter, $30 postpaid; Instructograph code machine, spring motor, functionally good, tapes, $15 postpaid; BC-221 freq. meter. L. A. Solberg, 5244 Shore View Ave., Minneapolis 17, Minn.

WANTED — Xmtr, all-band switching, VFO between 150 and 400 w., fone-CW, complete. Want VFO for both Bandmaster and Viking II. Ted Fisher, 1385 H St. NE, Washington 2, D. C.

TRADE — Weston 798 tube tester converted to type 5B; R1 with latest test data, for 16 mm movie camera or proj. Gordon Dunn, 53 Main St., Lake Placid, N. Y.

FOR SALE — 80 monotone xtals, 27 mc. to 34.9 mc. in one tenth mc. graduations (Western Elec.) with holder; Antique tubes, DeForests DV-2 audion and DV-3. Make offer. Mike Yacenich, 105 Elm Dr., Trafford, Pa.

WANT — TV50 genometer; Precise 630; BN cap. bridge. Have 13 1/4" x 27 1/2" aluminum sheets, $2.50; 4-1616, 1-1625, 1-837A, all for $2. J. Leach, Box 336, Milton, Del.

FOR SALE — Fairchild vertical transcription cartridge 216-A, like new. J. Dunbar, 1234 16th St., Parkersburg, W. Va.

FOR SALE — Model 110RT25 Cornell-Dubilier 250 w. 110 v. DC to 110 v. AC converter, 1. n., sacrifice. Miss Florence Sheehan, 45 Tudor City Pl., New York, N. Y.

SELL OR TRADE — Philco power transformer. Write for info. Want good scope kit or commercial with manual. Clifton Johnson, 908 East Grand Ave., Escondido 7, Calif.

FOR SALE — BC-604 xmtr with 12 v. power supply, 400 v. at 200 ma. with BC-603 new rcvr, no power supply, both $30; TBY xmtr-rcvr complete with 110 v. AC and DC supply, mic-phones and spare parts, complete, $25. R. P. Glemser, 6115 North Lawrence Street, Philadelphia 20, Pa.

WANTED — 27.255 mc. model radio control transmitter and/or receiver, parts, schematics. Cash for reliable outfit in good operating condition. Russell E. Pierce, Box 323, Ashton, R. I.

SELL OR TRADE — Advanced TV Servicing course; Meissner IF xformers; receiving tubes; 12" speaker, exc. cond. Sell all or part or trade for 40-80 meter crystal-cont. xmitter or ?? Wendell Way, 1322 12th St. NE, Canton 5, Ohio.

FOR SALE — Hallicrafters S-20R rcvr with electric eye tuning and antenna trimover in N.Y.C. vicinity, very good condition, exc. for novice. Make offer. Herbert Paskin, 377 Central Ave., Brooklyn 21, N. Y.

FOR SALE — Test-Rite Ins. Co. model B45 sig. gen., 150 kc. to 50 mc., like new, $6, prefer local. M. McNamare, 1583 E. 96th St., Brooklyn 36, N. Y.

FOR SALE — Leece-Neville 6 v. 65 amp. alternator with voltage regulator, rectifier and harness, $40. Harry M. Boone, 200 Brightside Ave., Pikesville 8, Md.

FOR SALE — Philco projector tubes PT400 for model 2500, one never used, $25, three used, $14 each. R. E. Sexton, 815 Violeta Dr., Alhambra, Calif.

WANTED — 5" scope in good working order, and small RF sig. gen. M. Boland, 769 St. Marks Ave., Brooklyn 13, N. Y.

SWAP OR SELL — 17" TeleKing TV chassis, new CRT, exc. cond. Want FM or FM & AM tuner. Prefer local. Murry Liebowitz, 360 95th St., Brooklyn 9, N. Y.

FOR SALE — Canadians: radio course, test equip., books, parts, etc., $400, or offer. W. Kay, 6166 Fraser St., Vancouver 15, B. C., Canada.

FOR SALE — Eico 221K VTVM, just built, never used, calibrated, $25, local only. S. Keitz, 7 St. James Pl., New York 38, N. Y.

FOR SALE — Hallicrafters S-85, practically new, perf. cond. Make offer. Leonard V. Day, Jr., 1145 Green Tree Lane, Penn Valley, Narberth, Pa.

WANTED — Mackey bug, universal modulation transformer, 30 w., like UTC S-19. Cash or will trade carbon mike, oil photo paint set, radio text books. Bob Cushing, 12 Carver St., Plymouth, Mass.

FOR SALE — Hallicrafter HT9, good cond., 80, 40, 20, 10 meter coils, filter, and spare 814, will ship, $150. John A. Kakstys, 18 Hillcrest Terr., Linden, N. J.

FOR SALE — NC-125 rcvr and HRO spkr, exc. cond., little used, instructions incl., $125 plus shipping; also Webcor clock-radio, month old, $25. Bob Wysocki, 38 Wilson St., Haverhill, Mass.

SWAP — Ultra-linear Williamson Hi-Fi amp., power supply on separate chassis; Tech-Master TM-17P pre-amp and VM changer with base for late model Rolliecord camera. A. Alcanio, 67 Stewart St., Brooklyn 7, N. Y.

TRADE OR SELL — 6 v. Leece-Neville alternator, rectifier, regulator, and ammeter. Want good 152-162 mc. FM rcvr or tuner such as Gonset. Prefer local. Richard Fogelman, 5750 Pershing Ave., St. Louis, Mo.

SWAP OR SELL — Fada FM tuner, model 795, for VTVM or VOM; also have books on radio and TV. Need good binoculars. Sigmund Kordik, 1 Arch St., No. Brookfield, Mass.

FOR SALE — Engineering, mech. drawing, and math. texts (2nd hand); also Philco AR9 car radio, good cond., $20. W. H. Collins, 643 East 83rd Pl., Chicago 19, Ill.

FOR SALE — Amateur crystals in 40- 80- and 15-meter novice band P.R. brand on 7191, 7152, 7059, 7075, 3726, 3743, $2 per xtal. Specify frequency. Stephen Lynch, 80-65 Lefferts Blvd., Kew Gardens 15, N. Y.

FOR SALE — Ten-year-old Scott radio, in perf. condition, mahogany console. Mrs. J. Duncan George, 370 Franklin Place, South Orange, N. J.

FOR SALE — Webster-Chicago model 80 wire recorder, several spare spools, instruction manual, $35 FOB. Langlois, 1448 Randall Ct., Los Angeles 65, Calif.

FOR SALE — Like new RCA WO-56A scope, $100; Hickok 191X sig. gen., $100; Philco 7052 dynamic mutual conductance tube checker, perf., $95; Riders Vols. 6 and 8; Hickok 125 VTVM, $65. Bud's Radio TV Service, 5912 Hampton Blvd., St. Louis 9, Mo.

WANTED — Industrial electronic equip., such as unused relays, tubes, timers, cond., etc. Have centrifuge, LM freq. meter, freq. standard, swap lists. C. Hackenson, 343 Mansfield St., Sharon, Mass.

SWAP OR SELL — 500 w. fone xmtr no TVI; 1 kw. fone xmtr, needs work to be de-TVI; mobile all-band rcvr and xmtr, high power tubes, for photographic or fishing equip., or boat. C. S. Greene, 107 West Center St., Clayton, N. J.

FOR SALE — VTVM, Heathkit V-4A, not printed circuit, in fine cond., $22 postpaid. Matthew Garey, 1601 Pedley Dr., Alhambra, Calif.

FOR SALE — Like new grid dip meter, Lysco AC-DC 110 v., with complete set of coils. Best offer gets it. Mack O. Santer, 544 East 6th St., New York 9, N. Y.

FOR SALE — Tapemaster, PT-121, 7½" p.s., dual track, $40; Heathkit A-76, 6 w. with preamplifier, $15; speaker, 12" PM, impedance 4 ohms, $5. All in good cond., $50 for all. Prefer local. Robert Koslovsky, 3150 Meadowbrook, Cleveland 18, Ohio.

FOR SALE — Amplifier with tubes, very good cond., ample gain for mike or phono, dual input, $7 postage paid. Brad Lentz, 710 E. Virginia, Peoria 4, Ill.

TRADE — Press camera: unused Burke and James 4" x 5" with used pre-war Kodak 4.5 lens, for tape recorder with or without playback amplifier or speaker. Elmer H. Purchase, 24 Wellesley Rd., Upper Montclair, N. J.

WANTED — Job by correspondence course student in Kingston or Poughkeepsie, N. Y., area on part-time basis only, in shop servicing radio and phonos, no TV. William E. Loucks, c-o George H. Smiley & Son, Inc., Lake Minnewaska, N. Y., c-o garage.

FOR SALE — Hard-to-get parts (used) for General Elec. LB-530 radio; Repair Instructions manual; scopes, BC-991-A and BC-991-B. Make offer. Selby Radio Service, 3605 South Selby St., Marion, Ind.

SELL OR TRADE — English tubes, English sockets, condensers (oil type), 2-gang variable condensers, single var. condensers, all are unused components removed from English aircraft rcvrs type R-1120. D. R. Canady, 931 South Court St., R. 1, Medina, Ohio.

WANTED — CQ for May '49, Nov. '55; QST for Aug. '53; modulation transformer 15 w. primary 6, 8 or 10,000 ohms, 100-150 mils, secondary 5000 ohms 80-100 mils. A. R. Marcy, 168A No. A1A Dr., Patrick AFB, Fla.

FOR SALE — HQ-129X, NC-240D and Super Pro rcvrs with speakers, good cond., $175 each. L. Saunders, 123 Winter St., Battle Creek, Mich.

WANTED — Power supply and component parts for a kilowatt final amplifier. Dan Byrne, 650 So. 25th Ave., Bellwood, Ill.

FOR SALE — HG41 Premax base insulator, $10; 136M Premax antenna, $10; Millen R9'er, $10; RME MB3 code monitor, $15; Instructograph with tapes, $25; etc. R. E. Cocklin, 2202 St. Elmo NE, Canton, Ohio.

FOR SALE — 7" RCA, $15; Webster 78 rpm record changer, amplifier and spkr, $12. Both in good cond., local only. John Leuck, 1419 Rowland St., Bronx 61, N. Y.

INFORMATION — Would like to contact local amateur radio club with code practice sessions, or any local amateur interested in code practice and theory needed to obtain amateur license. Gerald Goldstein, 188 Ten Eyck Walk, Brooklyn, N. Y.

SELL — RCA model 710 UHF sig. gen., 370-560 mc., $75; PCA 2T-200 Panadaptor, $50; BC-1031A Panadaptor, $75. G. H. Goldstone, 25416 Parkwood, Huntington Woods, Mich.

WANTED — 30-50 mc. rec., TV field strength meter. Have 931A and 3KP1 tube, other test equip. to trade. J. W. Doud, 829 Sheridan, Salina, Kan.

FOR SALE — Heathkit: SG-8 sig. gen. $15, TC-2 tube checker $25, BE-4 battery eliminator $27. Eric B. Olsen, RD 1, Kingsville, Ohio.

FOR SALE — Grid modulator using 6Y6G and 6S17, $10; power supply, 500 v. at 60 ma., $4.50. Both for $14, plus postage. Harold Kolenbrander, Steen, Minn.

FOR SALE — Hickok 600A tube tester, like new, $110. L. F. Kirkman, 2444 "D", Lincoln, Neb.

FOR SALE — Monitor car radio model M51, $19; '54 Packard radio, $25, or trade for other auto radios. Best Radio, 3349 Fulton Rd., Cleveland, Ohio.

SELL OR SWAP — Several pair Klein wire splicing clamps for cash or parts or tools for serviceman. Marvin Burlin, 111 White Horse Pike, Audubon 6, N. J.

FOR SALE — FB-7 National receiver incl. power pack and coils, $35; Meissner sig. shifter and xtal spotter, complete, $35; Pentron tape recorder, dual speed, $65; IRE copies 1943-1953, $25. W. Tucker, 456 Colonial Ave., Union, N. J.

TRADE — Complete equipment for radio and TV repair shop, all in A-1 condition. Want power tools for woodworking shop. Thomas F. Wilson, Box 101, Charleston, Tenn.

FOR SALE — Dumont 304-H scope; Hickok 533A tube tester and 610A TV sig. gen. FM-AM; Sprague Tel-ohmike; Collins AM-FM tuner. Make offer. Cass Moran, 5949 Hereford, Detroit 24, Mich.

FOR SALE — RCA WV87-A VTVM, $50; RCA WO88-A scope, $50; RCA WR-59C sweep gen., $125; Sylvania 220 tube tester, $40; Sprague Kwik-Test, $12. Benny's Radio-TV Service, London, Ky.

FOR SALE — Pickering microgroove cartridge, model D-140S, .001" diamond stylus, like new, $15. Arthur Koehler, 130 Wadsworth Ave., New York 33, N. Y.

SWAP — Jackson condenser tester model 112, l. n., for 6 v. DC battery eliminator such as Eico or Heathkit, cash, or ham gear. Make offer. W. B. Soble, 6048 Alma St., Philadelphia 49, Pa.

FOR SALE — Supreme sig. gen., model 576, in working order, $15 plus shipping. E. Bersam, 399 School St., Watertown, Mass.

FOR SALE — Sams Photofacts 1-40, and 81-154, like new. Some never used. Make reasonable offer, you pay shipping. Herbert W. Kaegi, Cave-in-Rock, Ill.

FOR SALE — Books: Riders — How to Use Meters, $2; Basic Vacuum Tubes, $2.25; Obtaining and Interpreting Test Scope Traces, $2; Fundamentals of Radio — Terman, $4; Understanding Radio — Watson, Welch, Eby, $5. All like new. Arthur Ideker, 1505 W. 14th, Pine Bluff, Ark.

FOR SALE — 6 unused coin-operated hospital type radios with pillow type speaker, $15 each. Radio-TV Clinic, 1118 15th St., Bedford, Ind.

FOR SALE — Audio Engineering, May '52 thru March '56. Best offer. J. P. Andrasko, 223 East 96th St., New York 28, N. Y.

WANTED — Lab types of Precision test equip, General Radio, Hewlett-Packard, etc.; BC-221 Frequency meters; ART-13 xmitters. Lectronic Research Labs, 715 Arch St., Philadelphia 6, Pa.

FOR SALE — Riders: Radio 1-22, $90; TV manuals 1-11, $75. Will sell individual TV manuals, best offer, all in good cond. R. & M. TV, 284 Morris Ave., Elizabeth 3, N. J.

SWAP — Stamp collection of choice foreign for good rcvr and/or xmitter. Joseph Ferreira, 1155-B School Ave., Patrick AFB, Fla.

SWAP — Motorola 69-20A mobile xmitter now on 10 meters (28.8), complete with cable, head, power supply and mike. Want Lettine 240 or equivalent. H. W. Fleischut, 312 W. Railroad, Pottsville, Pa.

FOR SALE — Heath Sine and Square wave audio gen., G-2, exc. cond., $20; unused Eico 944 flyback xformer and yoke tester, $23. Both for $40. Joseph F. Dineen, 9 Winter Terr., Westwood, Mass.

WANTED — Transistor paging receiver, 19" or 20" TV with Standard tuner, and good picture tube (no cabinet); 3-speed automatic record changer. Cash or swap for ?? Fred Bartlett, 1235 So. Grove Ave., Berwyn, Ill.

FOR SALE — McGuire 6-tube coin-operated radios in wood cabinets, good cond., $10 each FOB. Brown Taylor, 1307 Vultee Blvd., Nashville, Tenn.

SELL OR TRADE — 41 unused asst. TV tubes for SX42 or SX28 or good all-wave Philco or Zenith rcvr. Charles Luckett, 211 E. 8th Ave., Roselle, N. J.

TRADE OR SELL — NRI S.G. 88 and manual; Astatic AT1 4-tube booster; NRI manual No. 1; Sams 2, 21, 31 thru 38; 50 Standard brand 6AC7 perf. tubes. Want good UHF converter, and air compressor. O. D. Johnson, 2406 Proctor Rd., Durham, N. C.

WANTED — Monitoradio DR200 FM rcvr, two bands, 30-50 mc and 152-174 mc. Have B&H 70 movie camera, f3.5 lens, carrying case, other photo items to trade. N. M. Griffin, Box 343, Ithaca, N. Y.

WANTED — Pix tubes — 3KP4, 17BP4, 20DP4, 21FP4, used but in good cond. Clarence F. Steier, 1000 Rosemary Dr., Louisville 13, Ky.

BEST OFFER — High power all-band rig, PP813s, 807, VFX680, screens and grids electronically regulated; Variac control for 6500 v. at 700 ma. final power supply; 10 meters; Par-metal cabinet; coaxial fittings; spare tubes. R. DeVos, 140 Summit Ave., West Trenton, N. J.

WANTED — Magnetic tape, 3, 5, 7, 10" reels, either used or new. State quantity, cond., and price. J. A. Siderman, 41 Obre Pl., Red Bank 20, N. J.

FOR SALE — DuKane (Operadio) model 1A325, 25 w. amplifier, complete with 2 University 6200 speakers, and comb. speaker-amp. case, l. n., $125. Wayne Meyerhoff, Route 2, Box 118, Fairbank, Iowa.

WANTED — Scientific code course by Candler System. H. G. Radcliffe, 1013 West High St., Petersburg, Va.

TRADE — Zenith Trans-Oceanic Clipper less batteries, and fishing equip., for tube tester or other test equip. E. A. Sawyer, Box 346, Marshall, N. C.

FOR SALE — Motorola UHF convertors, TK-19M for TS-408 and TS-292 chassis, and TK-24M for TS-501 chassis, postpaid $20 each, cash or COD. Cortright Radio Service, R. 2, Albion, Mich.

FOR SALE — Antique radios with tubes; 6-tube A-C Dayton model XL-30, no cabinet; 3-tube unknown brand, partially restored; one horn speaker. Make offer. K. Ferrin, 485 S. Main, Miamisburg, Ohio.

FOR SALE — Unused Stancor ST-203A transmitter, wired and tested, includes all tubes, less crystals, $40. D. Epstein, 5411 Ft. Hamilton Parkway, Brooklyn 19, N. Y.

WANTED — Engineers surveying instrument; early type Edison or Columbia cylinder or disc phonograph; radio or electrical apparatus. Gifford Hartwell, 38 Charlemont St., Newton Highlands, Mass.

WANTED — To contact anyone interested in corresponding by and exchanging recording tape. Roger R. Murray, 21 Arbuelo Way, Los Altos, Calif.

FOR SALE — Alexander Hamilton modern business course, includes 26 volumes, guides, lectures, and problems, $60 postpaid. T. L. Black, 21 Blackstone Ave., Binghamton, N. Y.

FOR SALE — Hallicrafters SX28 15-tube 6-band receiver, exc. cond., $75. Prefer local. R. A. Hwang, 1418 Leavenworth St., San Francisco 9, Calif.

FOR SALE — Globe Trotter, VX101 deluxe, mobile transmitter, modulator and power supply; 812's, 6146's and others; many transformers. Send for list. Norman Inventasch, 320 E. 176 St., Bronx 57, N. Y.

FOR SALE — HRO complete $85; SX24 complete $50; Lysco 600 with 50 tuner, $75; Raytheon 147.5 mc. FM receiver and transmitter, 115 v. complete, $30; Heath FM2 receiver, $15. A. Salzwedel, 810 Second St., LaPorte, Ind.

FOR SALE — ARC-5, 90 w. transmitter with 200 ma., 750 v. supply, $50; 0-300 milliammeter, $5; intercom, $10; 75 w. Masco PA, $95; record changer, $5; Motorola portable, $5. A. Diedricksen, 40 Seneca St., New Britain, Conn.

WANTED — Jensen 18" auditorium spkr. C. R. Evans, 269 Birch Lane, Mountainside, N. J.

FOR SALE — Unused Knight capacitor checker kit, completely assembled, $15. Will's Radio Service, 614 Evangeline Dr., Ville Platte, La.

WANTED — Early wireless gear, catalogs, books, and magazines before 1923. Especially interested in Wm. Duck and Electro Importing Co. catalogs, DeForest equip., and loose couplers. Send description and prices. Glen Angle, Clear Lake, So. Dak.

WANTED — Small electric or arc welder. Will sell or trade older type, and odd type tubes, also condensers and resistors. Lefferson Radio, 405 South Walnut St., Bloomington, Ind.

SELL OR TRADE — Tubes: 7— A5, A7, AG7, B4, E5, E6, E7, F7, G7, etc., 12A8Gt; 12H6; 12K7Gt; 12Q7Gt; 12SF7. Send for list. Andrews, 740 Maple St., Bethlehem, Pa.

TRADE OR SELL — Omega Seamaster watch (in sealed carton), automatic, steel case, large second hand, lum. dial, $75, or Hi-Fi equip. L. Avis, 2099 Santa Cruz Ave., Menlo Park, Calif.

WANTED — Used ICS courses or misc. ICS lesson texts, any subject. State copyright date and number of lessons. G. Crapsi, 251 No. Ellicott St., Williamsville 21, N. Y.

WANTED — Relays 24 to 30 v. DC. Give contact arrangement current or size in first letter. Cash or trade. Electronic Service Co., Box 9-231, Richmond 27, Va.

SELL OR SWAP — RCA WV-97A volt-ohmyst; Hickok 533 counter model tube tester, with latest chart; Hallicrafter S-36 high freq rcvr. Want freq meter to cover 20 mc. up. Slim's, 2025 Sunkist Ave., Waukesha, Wis.

SELL — Leece-Neville 6 v. alternator, regulator, rectifier; Gonset super six, noise clipper, mounting bracket; dynamotors: Carter and Pioneer 400 v. DC 375 ma., exc. cond., $125. I. Schieber, 220 Boscobel Pl., New York 52, N. Y.

FOR SALE — Heathkit 07 scope, demodulator and low capacity probes, expertly wired, A-1 cond., modified increasing vertical frequency response, $40. Local preferred. K. Gambichler, 3201 Hull Ave., Bronx 67, N. Y.

SELL OR SWAP — Two Electro-Voice Tenna-top boosters, model 3010, perf., for Riders or what have you? John S. Agnich, 711 Cleveland St., Eveleth, Minn.

SELL OR SWAP — Heath 6 v. DC supply, model BE-2; Hallicrafter S-38; Electronic light dimmer; Feiler stethoscope TS-3A. Want tape recorder or let us dicker. Fred Welch, 845 Allingham St., Van Wert, Ohio.

WANTED — Like new Sams Record Changer manual, Vol. 1. Quote price. Albert C. Steiner, Milford, Pa.

SWAP — Electronic test equip. and large selection of new and used parts and hardware, for Karlson or R-J Enclosure, good Hi-Fi speaker, FH tuner or tape recorder. Local preferred. L. Buddine, 1700 W. High St., Haddon Heights, N. J.

SELL OR TRADE — Riders 5 thru 14, Sams 1 thru 5, Zenith 1 and 2, RCA 1 and 2, NRI Vol. 1 serv. manuals; tubes. Send stamped envelope for list. H. Garrett, 711 South New York, Sedalia, Mo.

WANTED — Instruction manual on McMurdo-Silver sweep sig gen., model 909. Cash. George Javor, 3119 East Erie Ave., Lorain, Ohio.

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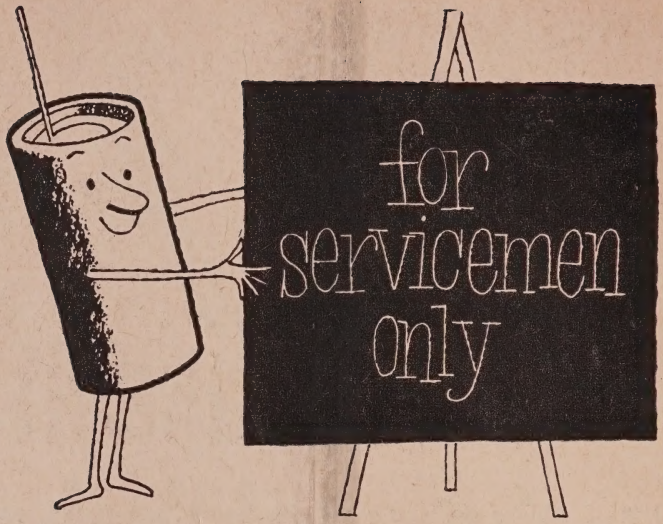

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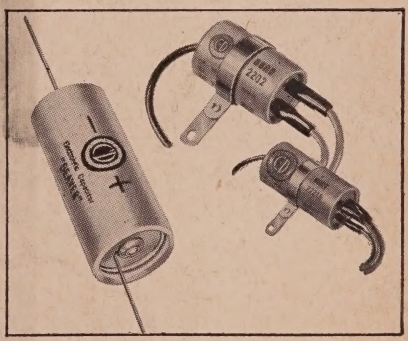

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